



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,793	08/28/2003	Gregory Cole	029211.52672US	5573
23911	7590	11/29/2006	EXAMINER	
CROWELL & MORING LLP INTELLECTUAL PROPERTY GROUP P.O. BOX 14300 WASHINGTON, DC 20044-4300				HARRIS, KATRINA B
		ART UNIT		PAPER NUMBER
				3747

DATE MAILED: 11/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/649,793	COLE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Katrina B. Harris	3747	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 12 October 2006.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 34-67 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 34-44 and 48-65 is/are rejected.
- 7) Claim(s) 45-47,66 and 67 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____.                                     |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____.   | 6) <input type="checkbox"/> Other: _____.                         |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 34-36, 42-44 and 48-65** are rejected under 35 U.S.C. 102(b) as being anticipated by Scofield (1,924,462).

Scofield discloses, as in **claim 34**, A generator for an engine comprising a flywheel configured so that a mass of rotatable magnets (21) and magnetic steel material associated with the flywheel (11) provide rotational inertia and function as a permanent magnetic rotor function to constitute a unitary flywheel-alternator fan assembly for alternator power generation, wherein an inner portion of the flywheel (11) constitutes the only structural member connecting the rotatable magnets and associated magnetic material with the engine crankshaft (5), said inner portion also functions as a cooling fan or blower to create the necessary air flow rate and air pressure rise necessary to force cooling air over selected areas of the engine.

Regarding **claim 35**, the inner portion is made from a lightweight material.

Regarding **claim 36**, the unitary flywheel-alternator fan assembly is the sole component driven by the engine.

Regarding **claim 42**, wherein the selected engine areas comprise at least one of an oil reservoir, electronics, cylinder head(4), and engine block. (See Figures 1-6)

Regarding **claim 43**, the engine is an internal combustion engine.

Regarding **claim 44**, wherein the cooling fan is selected from the group consisting of a centrifugal fan, an axial fan and a mixed flow fan.

Regarding **claim 48**, wherein the cooling fan provides a mechanical link between an inertia component and a mounting portion of the flywheel.

Regarding **claim 49**, wherein a lightweight alloy in the cooling fan constitutes the mechanical link and magnetic material of the alternator's rotor provides the inertia component.

Regarding **claim 50**, wherein the alternator is a permanent magnet alternator.

Regarding **claim 51**, wherein the alternator rotor, inertial material and fan or blower constitute a three-piece construction of lightweight material, magnetic material, and magnets.

Regarding **claim 52**, wherein the lightweight alloy is an aluminum alloy.

Regarding **claim 53**, wherein the alternator is a radial gap, twelve-pole alternator.

Regarding **claim 54**, wherein means is provided for converting alternating current produced by the alternator into direct current. (See lines 7-9, column 1)

Regarding **claim 55**, wherein the converting means comprises rectifiers (46).

Regarding **claim 56**, wherein an engine cowling (42) is provided to function as at least two of a fan shroud, a fan scroll, a distributor to cool the engine and the alternator, an electronic cold plate and one or more coolant ducts. (See lines 21-24, column 3)

Regarding **claim 57**, wherein the distributor function of the engine cowling separates air flow to cool at least two of an engine head, cylinder wall of the engine, electrical components, and an oil sump.

Regarding **claim 58**, wherein at least one coolant duct is associated with the oil sump which includes fins in the duct channel to enhance cooling.

Regarding **claim 59**, wherein the converting means is arranged at the engine cowling.

Regarding **claim 60**, wherein the alternator is configured to produce three-phase power in parallel circuits.

Regarding **claim 61**, wherein the converting means comprise full-wave rectifiers.

Regarding **claim 62**, wherein an engine cowling (42) is provided to function as at least two of a fan shroud, a fan scroll, a distributor to cool the engine and the alternator, an electronic cold plate and one or more coolant ducts. (See lines 21-24, column 3)

Regarding **claim 63**, wherein the converting means is arranged at the engine cowling(cover 42).

Regarding **claim 64**, wherein a backpack mounting is provided for the engine and alternator.

Regarding **claim 65**, wherein the engine and alternator are configured to produce a power output of up to about 5 kw.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claim 37** is rejected under 35 U.S.C. 103(a) as being unpatentable over Scofield (1,924,462). Scofield discloses the claimed invention except the magnetic material being steel. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use steel magnetic material in the Scofield reference, since it is well known in the art as a magnetic material.

**Claims 38-41** are rejected under 35 U.S.C. 103(a) as being unpatentable over Scofield (1,924,462). Scofield discloses the claimed invention except the magnetic material being steel. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the material combinations for the flywheel as set forth, since applicant has not disclosed that the material combinations solve any stated problem and it appears that the invention would perform equally as well with the chrome magnets and aluminum flywheel as taught by Scofield.

***Allowable Subject Matter***

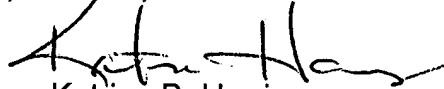
**Claims 45-47, 66 and 67** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Communication***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katrina B. Harris whose telephone number is 571-272-4842. The examiner can normally be reached on 5:30 AM -2:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Cronin can be reached on 571-272-4536. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Katrina B. Harris  
Examiner  
Art Unit 3747

KBH



STEPHEN K. CRONIN  
SUPERVISORY PATENT EXAMINER